



CRITICAL FACTORS INFLUENCING EFFECTIVE COMMUNICATION AMONG STAKEHOLDERS FOR PROJECT DELIVERY IN JIGAWA STATE

*¹Abdullahi Shazali, ¹Abdullahi Y. Waziri, ²Abdulwahab A. S., ³Yakubu Adamu and ¹Nafi'u Zadawa

¹Department of Quantity Surveying, Faculty of Environmental Technology, Abubakar Tafawa Balewa University Bauchi

²Department of Quantity Surveying, College of Environmental Studies, Jigawa State Polytechnic, Dutse

³Department of Architectural Technology, College of Environmental Studies, Jigawa State Polytechnic, Dutse

*Corresponding authors' email: ashazali@jigpoly.edu.ng

ABSTRACT

Communication plays an important role in project delivery in terms of relationship, trust and collaboration among internal stakeholders. This research aims to examine the relationship between factors influencing effective communication among stakeholders and construction project delivery with a view of improving communication among stakeholders in construction project delivery in Jigawa State. Questionnaire was used for data collection in Dutse capital of Jigawa state, various factors influencing effective communication among stakeholders are identified from literature review, experts and professionals working in public and private building project in Dutse capital of Jigawa state were selected using a probability sampling technique, a total of one hundred and eight (108) respondents were selected and interviewed using structured questionnaire which represent 90% of response rate. The data are analyzed by descriptive (frequencies and percentage,) and inferential statistics (spear's man correlation, ANOVA and regression coefficient) are conducted using SPSS 25 version software. The Findings shows that Leadership, trust, communication tools, communication skills, stakeholders involvement, cultural differences and communication technology have strong correlation with successful project delivery and understanding the factors influencing effective communication among stakeholders can foster better collaboration among stakeholders, minimize conflicts and disputes, and can lead to improved project outcomes, reduced delays, and increased customer satisfaction. Leadership, communication skill and communication tools have significant effect on construction project delivery. The factors influencing effective communication among stakeholders would consequently affect the performance of project delivery. These factors can be considered as the critical factors that enhance effective communication among stakeholders for successful project delivery in Jigawa state.

Keywords: Communication, Stakeholders, Construction, Project delivery

INTRODUCTION

Construction industry is the specialized sector of manufacturing responsible for planning, construction, maintenance, renovation, and repairs of physical structures. This includes residential homes and commercial building and infrastructure such as roads, bridges, and utilities (Jonny F., 2024). These types of construction project demand unique skills, expertise and resources to ensure successfully completion. Also, it involves multiple stakeholders, including the client, architects, Builders, Quantity Surveyors, civil engineers, mechanical engineers, electrical engineers, contractors, subcontractors, suppliers, and regulatory bodies other artisans and other service staff like accountants and secretaries (Hyginus E. et al., 2020). Each stakeholder has different priorities and expectations, effective communication requires that these parties are able to coordinate and collaborate effectively. Construction projects typically involve a large amount of technical information, including plans, drawings, specifications, and contracts agreement. Effective communication within the industry requires that this technical information is accurately conveyed and understood by all stakeholders (Hyginus E, et al., 2020).

Construction Industry is subjected to more risk and uncertainty than many other industries and does not have a good track record of coping with risks (Salman et al., 2014). Also, is a vast industry that is made up of many types of building and civil engineering jobs. (Jaser, 2005). The construction Industry is a large, dynamic, and complex sector that plays an important role in the economy of a nation. Compared with many other industries, the Construction

Industry is subject to more risks due to the unique features of construction activities, such as long periods, complicated processes, abominable environments, financial intensity and dynamic organization structures (Flanagan and Norman, 1993; Smith, 2006). Hence, taking effective risk management techniques to manage risks associated with variable construction activities that has never been more important for the successful delivery of a project (Zouet al., 2005).

Construction project is complex and unique environments that involves many parties to accomplish successfully project which most of them have different backgrounds, expectations, perceptions, knowledge and experiences. It can lead clash among parties, which have discrepancy standard specifications and outcomes (Bartleby, 2024).

Project delivery has evolved significantly over the years with the various development and trends emerging. The research has brought a remarkable development in the area of project delivery over the years by increase in successfully project delivery. The development is largely attributed to the emergence of new diverse method of project delivery that can successfully deliver projects such as Traditional project management, Agile and Iterative methods, Lean Construction, and Integrated project delivery (Black ridge research consultant, 2024). This development of the research provides clear understanding of communication challenges in Nigerian construction projects, it highlights the impact of communication on project delivery, it offers a comprehensive view of communication needs and challenges from various stakeholders, it contributes to the development of localized communication strategies, and it adds to the body of

knowledge with the primary data and analysis (Black ridge research consultant, 2024).

One of the major research significant in the area of project delivery is the development of integrated project delivery which is a project delivery approach that involves the integration of people, process, and technology to optimize project outcomes (American institute of Architects, 2007).

Construction projects delivery in Jigawa state have suffered many setbacks in terms of completion of project at stipulated period and within the predetermined sum and quality of the project due to lack of Effective communication among stakeholders which affect the project performance in terms of cost overruns, time overruns, rework of unsatisfactory work, interruptions of the execution of work, quality degradation, and design error (NIOB, 2022). To solve the issues of lack of effective communication among stakeholders on construction project delivery by considering the following factors been identified in the literature review, including Leadership, trust, communication skills, communication tools, stakeholders involvement, cultural differences, and communication technology we can minimized the issues of ineffective communication among stakeholders in Jigawa state.

Bernard I. et al, (2021) stated that a lot of failure of project performance in construction project delivery have been blamed on communication related problems. The effects of ineffective communication are usually high and they resulted from factors emanating from communication among stakeholders.

The delivery of project is inefficient and ineffective. Organizations worldwide continue to have issues with delivering project on time, on budget, on quality with high customer satisfaction. This issue has been documented in the construction industries. Research has shown the overall performance of project is poor with the following results: 2.5% of projects are defined as successful (scope, cost, schedule, and quality), only 30% of projects are completed within 10% of planned cost, schedule and quality, 25 to 50% is wasted due to poor communication on a project, and management inefficiency costs owners between \$15.6 and \$36 billion per year (Lapatner, B.B. 2007, PricewaterhouseCoopers. 2009, Yun, S. 2013). Literature research has also shown specific documented performance information for the construction industries. Industries have similar results of poor performance. The construction industry has had the following results (Kashiwagi, J. 2013).

Murali, (2007), stated that the problem of communication within project environment lead to misunderstanding among stakeholders and this affects the execution of the project. Yang et al., (2007), stated that the information sharing among the project stakeholders is vital for realizing the project objectives, construction project requires effective communication among project stakeholders for successfully project delivery. Effective communication between construction project stakeholders is central to achieving improved performance of construction projects (Hoezen, 2016). Bond-Barnard *et al.*, (2013) stated that effective communication among project stakeholders help to improve the level of understanding in order to achieve project objectives. Priyadharshini and Sashara, (2016) stated that effective communication is one of the most important factors contributing to the success of a project.

Lucas W., (2023) stated that stakeholders are parties or groups of people that are directly or indirectly have an interest or affect the progress of the construction project or final result. Efficient and effective communication is key to achieving project objectives. Failure to share project information adequately amongst project stakeholders affects coordination

and control regarding project delivery (Meng, 2012). Cheung *et al.*, (2013) noted that effective and efficient communication among project stakeholders could mitigate the risk of project failure.

Wong and Lam (2011) stated that the mode of communication and information transfer among relevant stakeholders are key to project performance. Therefore, there is the need for various stakeholders to communicate effectively so as to complete project within the cost target, time and quality. Therefore, when construction project stakeholders communicate effectively, there would be a cut on the volume of needless expenditure (Kamalirad and Kermanshachi 2018). There is existing research regarding communication in the following areas: Role of communication (Olaniyan, 2015); issue of communication in the Construction Industry (Justus *et al.*, 2016); An outline of project communication management in construction industry projects (Hala and Ogbebor, 2017); Difficulties of communication (Ishaq, 2018); Identification of circumstances and end results of poor communication in construction industry (Ismail *et al.*, 2018); Causes and effect of poor communication in the Construction Industry (Ayman and Mamoud, 2018); Role of communication in leading a fruitful global project (Le Bui, 2019). These researches have however not been able to determine the critical factors influencing effective communication among stakeholders on construction project delivery as a way of identifying communicating improvement strategies on construction project delivery. This gap the research seeks to fill to address the issues.

The research focused on Jigawa state, the state is among the 36 state in Nigeria which is located in North -West geopolitical zone, the study has been carried out in Dutse capital of Jigawa state and has been selected due to the presence of high Building construction project currently operated within the capital.

The key stakeholders are Architectures, Builders, Quantity Surveyors and Civil engineers as the respondents for the research who engaged in Building construction project within Dutse capital of Jigawa state. This suggested that reliable data could be obtain from the key stakeholders regarding factors influencing effective Communication among stakeholders in construction project delivery in Jigawa state hence the choice for adopting Dutse capital of Jigawa state is suitable for the study.

Theoretical background

Critical factors influencing effective communication among stakeholders in project delivery

From various studies, there are some researchers who have identified factors influencing effective communication among stakeholders in project delivery.

Leadership

Smit and Cronje, (2002) stated that Leadership is the process of directing the behaviour of others towards the accomplishment of the organization's goals. It involves taking the lead to bridge the gap between formulating plans and reaching goals; translating plans into the reality. Vander Walt *et al.*, (1996) stated that Leadership is the delegation of authority to subordinates, coordinating tasks and activities, communication on all levels of the enterprise and establishing a corporate culture that is conducive to the attainment of the overall objectives of the project. Walker, (2007) says project team members need leaders that can be trusted to lead the project towards the accomplishment of the goals of project. Neef, Roden, Al-khafaji and Renukappa, (2009) stated that Effective leadership may improve an organization's

economic, social and environmental performance, develop trust with stakeholders.

Trust

Hakanen and Soudunsaari (2012) stated that Trust is an important part of team building, in the absence of trust team members cannot be interested in taking about what they have in mind, putting forward their ideas to express their opinions. Team members hide their feelings and are not interested in helping each other. Newman et al., (2019) has identified that trust plays a significant role as a moderator to leader communication with team in affecting team performance. Pullin (2010) has identified that through trust, communication teams can share more information and cover the potential knowledge gaps within the project team where communication is weak.

Communication tools

According to Rai and Rai, (2014) stated that communication tools is one of the things that help to increase the effectiveness of communication, which is to be appropriately selected and used. The choice of appropriate communication tools depends on the different factors such as audience characteristics, information transfer speed, information confidentiality, accuracy of information transfer, reliability, transmission cost, availability of communication tools, degree of formality, importance and urgency, stakeholder expectations and duration and environment of the project.

Communication skills

According to PMBOK in Burke and Barron, (2007) stated that communication skills is the ability to translate knowledge into an action that results in the desired performance. Communication skills are the ensuring the right person gets the right information at the right time. Mahendra G., (2024) pointed out that communication skills play a crucial role in making project successful. If a project manager fails to convey the message with clarity to the team and stakeholders, achieving the targets would be deemed impossible. Hysa and Spalek, (2019), stated that communication skills are one of the most important skills required for project success. High quality communication occurs when project team members have enough time to communication with each other and exchange information formally or informally. Barrett, (2006) says good communication skills enable, foster and create the understanding and trust necessary to encourage others to follow a leader, without communication manager accomplishes little, without effective communication a manager is not an effective leader.

Stakeholders involvement

Aaltonen, (2011) has discovered that stakeholders are an important factor that can affect effective communication in project delivery. Aligning the goals, interest, and expectation of stakeholders is directly attributed to the success of project delivery. Hysa and Spalek, (2019) identified that creating and maintaining relationship between project team members and different stakeholders through effective communication is one of the requirements of successful project delivery. Welch and

Jackson, (2007) pointed out that Effective communication create a bridge between various stakeholders involved in the project delivery.

Cultural differences

According to Mesly, (2015); Wang et al., (2016) stated that the main challenges for project managers is managing projects effectively in international context, environments in which people from different perspectives need to work together to achieve the project success. Ankrah et al., (2009) discovered that weak communication in the project can be another result of the company's culture and may cause misunderstandings and lack of information. Manoj R. and Samuel, (2016), have emphasized that differences between societies and language affect the understanding of communication faces. Social – cultural differences can be due to the social status of individual, religion, state policy, financial condition. The socio – cultural differences between members with geographic dispersion can cause various communication problems and barriers. Rondias, (2015) says cultural differences often cause misunderstandings in communication, because the messages are created or encoded in a cultural context and then they are received or decoded in another cultural context.

Communication technology

According to Hoffman and Schlosser, (2001), the use of modern communication and information technologies can significantly reduce the cost of information transfer and have a significant impact on the effectiveness of participation and easy transfer safety of it. Meid, (2015) pointed out that over the last decade, information and communication technology has established collaboration platform, hardware and software solutions that have connected people in a secure community and environment and produce useful tools for creating, organizing, researching as well as exchanging documents, information, ideas and more so as to be a leverage for controlling the effectiveness and efficiency of process and a guide to direct towards the alignment of activities with project objectives and alignment of staff goals with strategic goals of the organization.

Conceptual Framework

The figure 4 shows the causal relationship between independent variables and mediating variable, and also, shows the causal relationship between mediating variable and dependent variable. This is illustrated in the figure 4 below. The Conceptual framework analyzed that the various factors influencing effective communication among stakeholders and also, effect communication affect project delivery in terms of cost, time and quality performance. Construction projects are considered completed successfully when executed within schedule, budget and quality. There is a direct effect relating to independent variables to dependent variable and a mediated effect by which independent variables indirectly affects dependent variable through mediated variable.

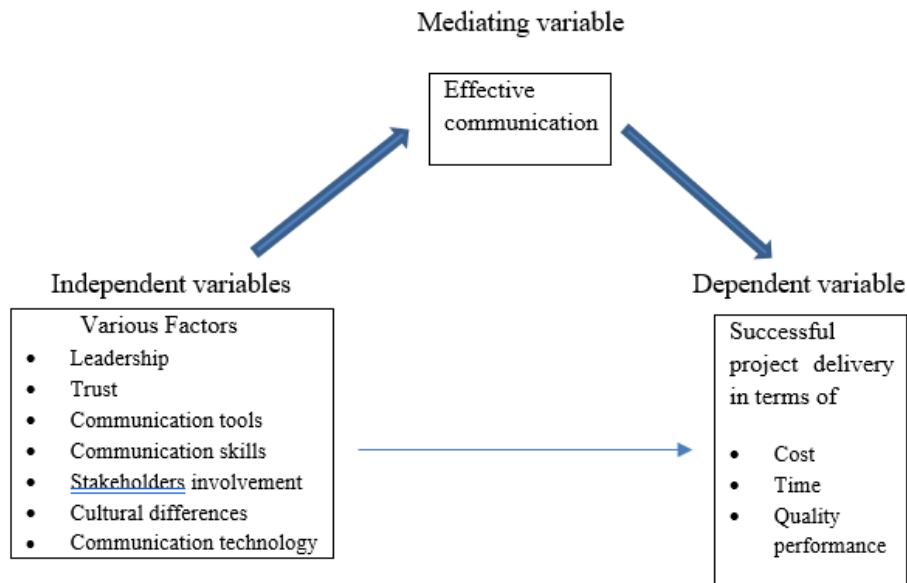


Figure 1: Conceptual framework

Hypothesis of study

H1: There is no positive relationship between factors influencing effective communication among stakeholders and construction project delivery.

H2: There is no significant effect of factors influencing effective communication among stakeholders on project delivery.

MATERIALS AND METHODS

The study applied formula to calculated the sample size. The total number of Architects, Builders, Quantity surveyors and Civil Engineers who are working with public and private organization in Dutse capital of Jigawa State is 190 obtained from professional bodies in Jigawa state. Therefore, the population of the Architects (50), Builders (42), Quantity surveyors (43) and Civil Engineers (55) (professional bodies) who are working with the public and private organizations within Dutse capital of Jigawa state. Sample size was calculated using formula (Slovin, 1967).

$$n = \frac{N}{1 + N(e)^2}$$

N= Population size e = Margin of error n = Sample size
Thus, give the total of one hundred and twenty (120) respondents. Questionnaires was personally sent to Architects, Builders, Quantity surveyors and Civil Engineers who are working in public and private organizations within Dutse capital of Jigawa state. Therefore, the total number of 120 respondents was used for the research. This research was limited to the following professionals, Architects, Builders,

Quantity surveyors and Civil engineers who are engaged in building construction project within Dutse capital of Jigawa state. The choice of these professionals was made based on their years of experience on project delivery ranging from 5 to 25years.

Sample size was carried out with 120 questionnaires distributed among professionals in the construction industry. 113 questionnaires were returned; 5 responses were discovered as being unusable as the respondents failed to fill important sections of the questionnaire and so were discarded leaving 108 valid responses. A total of one hundred and eight (108) responses were collected as properly completed and analyzed. The study has used Cronbach Alpha Coefficient and content validity ratio in order to check validity of the data. The data were analyzed using SPSS version 25 software.

The study employed Cronbach Alpha Coefficient to test the reliability of the scale within the instruments. To attain internal reliability, Cronbach 's alpha was used to assess the items measuring the underlying constructs and a value of 0.70 of Cronbach's Alpha is accepted and considered as a good level of reliability to the model (Pallant, 2013).

The research has employed content validity ratio in order to check validity of instruments, is determined by experts in the studied subject. Thus, the questionnaire was distributed among 12 experts. The frequency of each expert's agreement with each of the questions in the questionnaire was then determined, followed by the calculation of the content validity of Lawshe according to Formula (Onwuegbuzie et al, 2010).

RESULTS AND DISCUSSION

Table 1: Respondents

Respondents	Frequency	Percent
Valid		
Architects	30	27.8
Builders	27	25.0
Quantity surveyors	26	24.1
Civil engineers	25	23.1
Total	108	100.0

Based on the response obtained from Table1 above, 24.1% are quantity Surveyors, 27.8% are Architects, 25.0% are Builders while 23.1% are Civil engineers.

Table 2: Age of the Respondent (N = 108)

Nature of organization	Age group	Male	Female	Total	Percentage
Public organization	18 - 29 years	15	5	20	26.32
	30 – 39 years	17	-	17	22.37
	40 – 50 years	30	-	30	39.47
	Above 50 years	9	-	9	11.84
	Total	71	5	76	100
Private organization	18 - 29 years	4	-	4	12.50
	30 – 39 years	7	1	8	25.00
	40 – 49 years	14	-	14	43.75
	Above 50 years	6	-	6	18.75
	Total	31	1	32	100

Table 2. Is the age of the respondents, were 39.47% are from public organization ages between 40 and 49years while are 43.75% from Private organization were between 40 and 49years and the table indicates that there were more males than female respondents in the sample.

Table 3: Respondents working experience (years)

Years	Frequency	Percentage%
Less than 5 years	15	13.89
5 – 10 yrs.	32	29.63
11 – 15 years	20	18.52
16 -20 years	11	10.19
21 – 25 years	21	19.44
Above 25 years	9	8.33
Total	108	100

Table 3 above revealed respondents' years of working experience, those with less than 5years stand at 13.89%, majority 5-10years indicated 29.63%, 18.52 are those in between 11-15years, 16-20years showed 10.19%, 18.52%, while those within the range of 21-25years are 19.44% and 25years and above represent only 8.33%.

Findings of objective

Table 4: Reliability Statistics

Items	Factors influencing effective communication among stakeholders on construction project delivery	Reliability alpha	Cronbach's
1	Leadership	0.83	
2	Trust	0.87	
3	Communication tools	0.89	
4	Communication skills	0.91	
5	Stakeholders involvement	0.86	
6	Cultural differences	0.85	
7	Communication technology	0.88	

From table 4 it Shows that the data were accepted, all the items were within the acceptable value.

Table 5: Content validity ratio of each item

Factors	Necessary	Useful but Not Necessary	Not Necessary	Content	Validity	Ratio
1	Leadership	12	0	0	1	valid
2	Trust	12	0	0	1	valid
3	Communication tools	11	1	0	0.83	valid
4	Communication skills	12	0	0	1	valid
5	Stakeholders involvement	10	2	0	0.67	valid
6	Cultural differences	10	2	0	0.67	valid
7	Communication technology	10	2	0	0.67	valid
8	Effective communication on Successful construction project Delivery	12	0	0	1	valid

Table 5 shows the validity of the data, and the data were valid.

Table 6: Correlation Matrix

	Construc- tion project Delivery	Leadership	Trust	Communi- cation tools	Communi- cation skills	Stakeholders involvement	Cultural differences	Communi- cation Technology
Spearman's rho								
Construction project Delivery								
Coefficient	1.000							
Sig (2tailed)	.							
N	108							
Leadership								
Coefficient	0.673	1.000						
Sig (2tailed)	0.000							
N	108	108						
Trust								
Coefficient	0.713	0.936	1.000					
Sig (2tailed)	0.000	0.000						
N	108	108	108					
Communication tools								
Coefficient	0.744	0.949	0.982	1.000				
Sig (2tailed)	0.000	0.000	0.000					
N	108	108	108	108				
Communication skills								
Coefficient	0.726	0.943	0.931	0.943	1.000			
Sig (2tailed)	0.000	0.000	0.000	0.000				
N	108	108	108	108	108			
Stakeholders involvement								
Coefficient	0.723	0.984	0.958	0.964	0.960	1.000		
Sig (2tailed)	0.000	0.000	0.000	0.000	0.000			
N	108	108	108	108	108	108		
Cultural differences								
Coefficient	0.705	0.964	0.934	0.942	0.976	0.972	1.000	
Sig (2tailed)	0.000	0.000	0.000	0.000	0.000	0.000		
N	108	108	108	108	108	108	108	
Communication technology								
Coefficient	0.715	0.962	0.984	0.985	0.944	0.972	0.944	1.000
Sig (2tailed)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
N	108	108	108	108	108	108	108	108

Source field survey, (2023)

From table 6 above, revealed there is positive correlation between construction project delivery and leadership were r value = 0.673, p value = 0.000 at 0.05 significance level; the relationship between construction project delivery and trust is positive r value = 0.713, p value = 0.000 at 0.05 significance level; the relationship between construction project delivery and communication tools is positive were r value = 0.744, p value = 0.000 at 0.05 significance level; the relationship between construction project delivery and communication skills is positive were r value = 0.726, p = 0.000 at 0.05

significance level; the relationship between construction project delivery and stakeholder's involvement is positive were the r value = 0.723, p value = 0.000 at 0.05 significance level; the relationship between construction project delivery and cultural differences is positive were the r value = 0.705, p value = 0.000 at 0.05 significance level; the relationship between construction project delivery and communication technology is positive were r value = 0.715, p value = 0.000 at 0.05 significance level.

Multiple linear regressions

Table 7: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.855 ^a	.730	.711	.27604

The research findings in table 7 shows that the adjusted $R = 0.711$ indicated 71.1% of the variation in independent variables and $R^2 = 0.730$ indicated that 73% of the variation in dependent variable could be explained by model containing leadership, trust, communication tools, communication skills,

stakeholders, cultural differences and communication technology under study. 27% of the variation is still unexplained adding other independent variables could improve the fit of the model.

Table 8: ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	20.630	7	2.947	38.678	.000 ^b
	Residual	7.620	100	.076		
	Total	28.250	107			

Findings in Table 8 shows that the relationship between variables is significance in which independent variables have a significant effect on dependent variable where by the F-cal value = 38.678, p -value = 0.000, the F-cal. is greater than F-crit. = 2.10. Therefore H_0 : is rejected and H_a : is accepted. Hence there is significant relationship between factors

influencing effective communication among stakeholders and construction project delivery.

Table 9 showed the regression coefficients for the effective communication among stakeholders on combined influence of leadership, trust, communication tools, communication skills, stakeholders' involvement, cultural differences and communication technology on construction project delivery.

Table 9: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.459	.270		5.406	.000
	Leadership	-.555	.215	-.651	-2.574	.012
	Trust	-.403	.327	-.421	-1.232	.221
	Communication tools	.689	.341	.731	2.019	.046
	Communication skills	1.025	.220	1.145	4.668	.000
	Stakeholders	.526	.420	.643	1.253	.213
	Culture	-.246	.238	-.323	-1.036	.303
	Technology	-.316	.473	-.337	-.668	.506

From table 9 above the findings revealed that leadership has significant effect on construction project delivery as regression coefficient is $B = -.555$ ($t = -2.574$, $p < 0.012 < 0.05$), communication tools has significant effect on construction project delivery as regression coefficient is $B = 0.689$ ($t = 2.019$, $p < 0.046 < 0.05$), and communication skills has significant effect on construction project delivery as regression coefficient is $B = 1.025$ ($t = 4.668$, $p < 0.000 < 0.05$).

The results also, revealed that trust has no significant effect on the construction project delivery as regression coefficient was $\beta = -0.403$ ($t = -1.232$, $p = 0.221 > 0.05$). In addition, stakeholder's involvement has no significant effect on the construction project delivery as regression coefficient was $\beta = -0.526$ ($t = 1.253$, $p = 0.213 > 0.05$), cultural differences have no effect on construction project delivery as regression coefficient was $\beta = -0.246$ ($t = -1.036$, $p = 0.303 > 0.05$), communication technology has no effect on construction project delivery as the regression coefficient was $\beta = -0.316$ ($t = -0.668$, $p = 0.506 > 0.05$). Therefore H_0 : is rejected and H_a : is accepted. Hence there is significant effect of factors influencing effective communication among stakeholders on construction project delivery.

CONCLUSION

The study is limited by its geographical focus on Jigawa state and its reliance on quantitative data from a specific group of professionals, include Architects, Builders, Quantity surveyors, and Civil engineers from private and public organization in Dutse capital of Jigawa state.

The study identified several critical factors that influencing effective communication among stakeholders on construction project delivery, including leadership, trust, communication tools, communication skills, stakeholders involvement, cultural differences and communication technology.

The research examined several critical factors influencing effective communication among stakeholders, including leadership, trust, communication tools, communication skills, stakeholders involvement, cultural differences, and communication technology which significantly impact project delivery using quantitative method through questionnaire survey only.

The findings indicated that leadership, trust, communication tools, communication skills, stakeholders involvement, cultural differences and communication technology have

positive relationship with construction project delivery, moreover have significant effects on construction projects delivery.

Special preventive measures should be taken to overcome the communication problems on construction project delivery in Jigawa state and the research suggested for the use of mixed method (questionnaire and interview) for further study.

REFERENCES

- Anantatmula, V.S., (2015). Strategies for Enhancing Project Performance, *Journal of management Engineering* **31** (6), 401-501
- Aaltonen, K., (2011). Project Stakeholder Analysis as an Environmental Interpretation Process. *International Journal Project Management* **29**(2), 165183
- American Institute of Architects, (2007). Integrated Project Delivery: A Guide.
- Bernard, (2021). The Impact of a Call Centre on Communication in a Programmed and its Projects, *International Journal of Project Management* **31** (7), 1006–1016.
- Brewer, G., Strahorn, S., (2012), Trust and the Project Management Body of Knowledge, *Engineering Construction Architecture Management* **19** (3), 286–305.
- Bartleby, (2020), Construction Project: Complex and Unique Environment. Retrieved from www.bartleby.com
- Buckley, et al., (2009). Cultural Awareness in Knowledge Transfer to China – The Role of Guanxi and Mianzi. In: Foreign Direct Investment, China and the World Economy.
- Berggreen, L., (2015). Project Management Communication 2.0 - The Sociotechnical Design of PM for Professional Communicators. In: IEEE International Professional Communication Conference, 2015-Septe
- Campbell, G., (2011). The Complete Idiot's Guide to Project Management. Alpha Books, Indianapolis, IN.

- Ceric, A., (2014). Minimizing Communication Risk in Construction: A Delphi Study of the Key Role of Project Managers. *Journal of Civil Engineering Management* **20** (6), 829–838.
- Culo, K., Skendrovic, V., (2010). Communication Management Is Critical for Project Success. *Informatologia* **43** (3), 228–235.
- Daim, T. et al., (2012). Exploring the Communication Breakdown in Global Virtual Teams. *International Journal of Project Management* **30**, 199–212.
- Dreesen, T., et al., (2016). Beyond the Border: A Comparative Literature Review on Communication Practices for Agile Global Outsourced Software Development Projects. In: 2016 49th Hawaii, International Conference on System Sciences (HICSS), pp. 4932–4941.
- Decker, E., (2015). Trust: The Foundation for Building Cohesive Teams, pp. 1–10.
- Furnell, R., (2014). Can social networking improve project management? An exploratory study of UK professional experience. In: International Conference on Information Society (i-Society 2014), pp. 152 – 156.
- Guffy, M.E., (2007). Essential of Business Communication, Seventh ed. Thomson.
- Hoezen, M. (2016). The Competitive Dialogue Procedure: Negotiations and Commitment in Inter-Organizational Construction Projects. Doctoral Dissertation, University of Twente, Enschede, Netherlands
- Hakanen, M., and Soudunsaari, A., (2012). Building Trust in High-Performing Teams. *Technology Innovation Management Review* **2** (June), 38–41.
- Hysa, B., and Spalek, S., (2019). Opportunities and Threats Presented by Social Media in Project Management. *Heliyon* **5** (4), 01488.
- Hyginus E, (2020). Factors Causing Ineffective Communication and Its Effect on Construction Project. *International Journal of Engineering and Science* **10**(8), (2020), pp 19 - 26
- Henderson, L., et al., (2004). The Centrality of Communication Norm Alignment, Role Clarity, and Trust in Global Project Teams. *International Journal of Project Management*.
- Jonny F. (2024). 6 Types of Construction Key Differences. Pp 1 - 15
- Kashiwagi, J. (2013). Dissertation. “Factors of Success in Performance Information Procurement System / Performance Information Risk Management System.” Delft University, Netherlands
- Kelly, S., and MacDonald, P., (2019). A Look at Leadership Styles and Workplace Solidarity Communication. *International Journal of Business Communication*.
- Kittler, M.G., (2011). Beyond Culture or Beyond Control? Reviewing the Use of Hall’s High-/Low-Context Concept. *International Journal of Cross-Cultural Management* **11**, 63–82.
- Lepatner, B.B. 2007, Broken Buildings, Busted Budgets, The University of Chicago Press, Chicago.
- Liu, W.H., and Cross, J.A., (2016). A Comprehensive Model of Project Team Technical Performance. *International Journal of Project Management* **34** (7), 1150–1166.
- Lee-Kelley, L., (2006). Locus of Control and Attitudes to Working in Virtual Teams. *International Journal Project Management* **24** (3), 234–243.
- Livesey, P.V., (2016). Insights of Project Managers into the Problems in Project Management. *Construction Economic of Building* **16** (1), 90–103.
- Mavuso, N.M., and Agumba, J.N., (2016). Factors of Communication Management for Successful Project Delivery in the Swaziland Construction Industry, pp. 19–21.
- Muszynska, K., (2018). Communication Maturity Model for Organizations Realizing EU Projects. *Procedia Computer Science* **126**, 2184–2193.
- Mesly, O., (2015). Exploratory Findings on the Influence of Physical Distance on Six Competencies. *International journal of project Management* **33** (7), 1425–1437.
- Meyer, E., (2015). The Culture Map. Public Affairs, New York.
- Morris, P., (2008). The Basics Business Communication. (3rd (Third). Thomson South-Western
- Mavuso, N.M., Agumba, J.N., (2016). Factors of Communication Management for Successful Project Delivery in the Swaziland Construction Industry, pp. 19–21.
- Manoj Ray, D., Samuel, P., (2016). Improving the Productivity in Global Software Development. *Advance Intelligent System Computing* **424**, 175–185.
- Mahamid, I., (2016). Micro and Macro Level of Dispute Causes in Residential Building Projects: Studies of Saudi Arabia. *Journal of King Saud University Engineering Science* **28** (1), 12–20.
- Meid, A. (2015). An Engineering Management Analysis of Communication System in an Organization that Supplies the Mining Industry. <https://ujdigispace.uj.ac.za/bitstream/handle>
- Oyegoke, et al., (2013). Stakeholders Assessment of Constraints to project delivery in the Nigerian. *Construction Industry. International Journal of Build Environment and Sustainability*. **4**(1), 2017, Pp.2
- Pant, I., (2008). Project Management Education: The Human Skills Imperative. *International Journal of Project Management* **26** (2), 124–128.
- Pheng, L.S., (2018). Project Communications Management.
- PMI, 2017. A Guide to the Project Management Body of Knowledge (PMBOK Guide), sixth ed. Project Management

- Institute. A Guide to the Project Management Body of Knowledge (PMBOK Guide). *FUDMA Journal of Sciences (FJS) Vol. 6 No. 6, December, 2022, pp 125-137*
- Pivec, M., (2019). Employment Background Influence on Social Media Usage in the Field of European Project Management and Communication. *Journal of Business Research 94*, 280–289.
- PricewaterhouseCoopers, (2009). “Need to know: Delivering capital project value in the downturn.” <https://www.pwc.com/co/es/energia-mineria-y-servicios-publicos/assets/need-to-know-eum-capital-projects.pdf>. Accessed September 16, 2015.
- Pullin, P., (2010). Small Talk, Report, and International Communicative Competence: Lessons to Learn from belf. *Journal of Business Communication 47 (4)*, 455–476.
- Roudias, J., (2015). Mastering Principles and Practices in PMBOK, Prince 2, and Scrum: Using Essential Project Management Methods to Deliver Effective and Efficient Projects. Paul Boger.
- Reed, A.H., Knight, L.V., (2013). Exploring the Role of Communication Media in the Informing Science Model: An information technology project management perspective. *Information Science 16 (1)*, 131–145.
- Rai, U., and Rai, S.M., (2014). Effective Communication (Sixth). Himalaya Publishing House.
- Senaratne, S., (2016). Communication in Construction: A Management Perspective through Case Studies in Sri Lanka. Architect. *Engineering Design Management 12 (1)*, 3–18.
- Salman et al., (2014), Jaser, (2005), Flanagan and Norman, 1993; Smith, (2006) and Zou et al., (2005). Mapping the Risk Response Strategies on Classified Building Construction-Related Risks
- Sluyts, K. et al., (2011). Building Capabilities to Manage Strategic Alliances. *Industrial Marketing Management 40 (6)*, 875–886.
- Steyn, H., (2012). Project Management a Multi-Disciplinary Approach (3rd Revise). FPM Publishing, Pretoria, 2012.
- Van der Walt, A., et al., (2016). Marketing Management. 3rd ed. Kenwyn: Juta.
- Wikipedia (2020). Effective Communication and Communication Channel. http://en.wikipedia.org/wiki/Communication_management
- Wikipedia, (2015), Influence of Communication Problems on Project Performance in Nigeria *African Journal of Engineering Research 7(3)*, 2-5
- Warner-Søderholm, G., 2013. Beyond A Literature Review of Hall’s Context Dimension: Scale Development, Validation & Empirical Findings within a Norwegian Study. *International Journal of Business Management 8 (10)*
- Yang, R.J., and Wang, Y., (2014). Stakeholders’ Attributes, Behaviors, and Decision-making Strategies in Construction Projects: Importance and Correlations in Practice. *Project Management Journal 45 (3)*, 74–90.
- Yun, S. (2013). The impact of the business-project interface on capital project performance. The University of Texas at Austin. Retrieved from <http://repositories.lib.utexas.edu/handle/2152/22804>
- Zulch, B. G. (2014). Communication: The Foundation of Project Management. Conference on Enterprise Information System

